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| APPLICATION NO.             | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------|-------------|----------------------|---------------------|------------------|
| 09/892,662                  | 06/28/2001  | Moo Jin Lee          | 8733.485.00         | 2042             |
| 30827                       | 7590        | 01/14/2004           | EXAMINER            |                  |
| MCKENNA LONG & ALDRIDGE LLP |             |                      | LANEAU, RONALD      |                  |
| 1900 K STREET, NW           |             |                      | ART UNIT            |                  |
| WASHINGTON, DC 20006        |             |                      | PAPER NUMBER        |                  |

2674

DATE MAILED: 01/14/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/892,662             | LEE, MOO JIN        |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Ronald Laneau          | 2674                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO 048)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO 152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

***Response to Amendment***

1. The request for reconsideration filed on 10/06/03 has been entered. Claims 1-19 are still pending.

***Specification***

2. Applicant's objection to the incorporation by reference of essential material to a foreign application has been considered and the objection is withdrawn in view of applicant's arguments.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohi (US 5,604,511) in view of Applicant's Admitted Prior Art (AAPA).

As per claims 1 and 7, Ohi teaches a liquid crystal display apparatus with thin film transistors (TFTs) and a driving voltage comprising: a timing controller for receiving an input signal from the input and having an output signal, video signals N1 having a frequency which is lower than the frequency of the RGB video signal (detecting the frequency), a compensation voltage for compensating the brightness of the voltage in response to a control signal (col. 4, lines 46-59, figs 3 and 4). Ohi does not teach digital-to-digital converter for generating a compensation voltage and deliver it to the liquid crystal display panel but the AAPA discloses in

fig. 1 a voltage converter 14 (digital-to-digital converter) capable of delivering the compensation voltage from Ohi's device to the liquid crystal display as claimed.

It would have been obvious to one of ordinary skill in the art to utilize the voltage converter (digital-to-digital converter) as disclosed in the AAPA) into the device of Ohi because it would be capable of providing high voltage as well as low voltage to the liquid crystal display and therefore improve the reliability of the compensation signal going into the display panel.

As per claims 2 and 3, the compensation voltage taught by Ohi is capable of including any of a gate high voltage and a common voltage of the thin film transistors as claimed (see figs 3, 4).

As per claim 4, this a method claim corresponding to the apparatus of claim 1 and is therefore rejected on the same basis set forth in claim 1.

As per claims 6 and 7, see rejection of claims 2 and 3.

As per claims 8 to 10, the driving voltage taught by Ohi et al is capable of including a high voltage level of the scanning lines and a common voltage level of the scanning lines as claimed (see figs 3, 4).

As per claims 11 and 12, Ohi teaches video signals N1 having a frequency which is lower than the frequency of the RGB video signal (detecting the frequency) as claimed.

As per claim 13, this a method claim corresponding to the apparatus of claim 1 and is therefore rejected on the same basis set forth in claim 7.

As per claims 14-16, see rejection of claims 8-10.

As per claims 17-19, the voltage compensation taught by Ohi comprises the raising or lowering voltage level of the scanning lines in order to adjust the brightness of the LCD panel (see figs 3,4).

***Response to Arguments***

5. Applicant's arguments filed 10/06/03 have been fully considered but they are not persuasive.

Applicant's arguments about Ohi not teaching all the claimed elements such as a digital-to-digital converter for generating a compensation voltage are moot in view of the new position taken by the examiner.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Baek (US 6,525,720) teaches a drive circuit connected between the liquid crystal display panel and the timing controller to display a data inputted from the timing controller on the liquid crystal display panel in response to the control signal.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: ronald.laneau@uspto.gov.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ronald Laneau  
Examiner  
Art Unit 2674



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January 11, 2004